

Intellectual Property for Humanity: A Manifesto*

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Abstract

This chapter considers the challenge posed by Peter Drahos' work on the 'duties of privilege', and provides a normative analysis of an intellectual property (IP) regime by articulating IP duties as a lens for defining the optimal scope of IP monopolies. It builds on a correlative duty-based approach as a parameter to better approximating dignitarian thoughts in IP. A paradigm shift to a balanced framework incorporating the duty approach would reconfigure the imbalance and redress the undesirable consequences of inequality.

A duty-based approach is not advocating a dichotomy regime separating rights from duties or replacing rights with duties, but a binary one taking full advantage of the extant IP flexibilities by embedding a sense of belonging, connectedness, honour and respect in a community of IP rights. A duty-based approach will work towards a collaborative humanitarian discourse and serve as a nuanced underpinning to the interface of IP power and competition where impacts will benefit society. Internal and external forces are identified for regulating IP following a comprehensive study on the philosophies of ownership. It concludes by proposing the primary waves of IP duties: a duty to self-moderation; a duty to benefit sharing; a duty to open innovation, and a duty to dissemination.

Key words

Intellectual property duties; humanity; patents; Sustainable Development Goals (SDGs); intellectual property philosophies; Socially Valued Inventions (SVIs)

The current international intellectual property (IP) regime has been suffering from critiques of entrenching social divisions and disparities owing to a one-size-fits-all regime that disproportionately protects rightholders' interests against other legitimate interests. IP protections on global public goods related to public interests such as health, education, and international development, are particularly contested.¹ As work by Peter Drahos and others has shown, our

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society have been accustomed to the proprietary justifications on information and knowledge and ignored the instrumental nature of IP.² The individual rights-based regime neglects the collective identity and duties arising from ownership. A new approach is critical in fostering innovation that addresses global challenges of climate change and health security. This chapter considers the challenge posed by Peter Drahos' work on the 'duties of privilege'³ and provides a normative analysis of an IP regime by articulating primary IP duties as a lens for defining the scope of IP monopolies. A paradigm shift to a balanced framework incorporating the duty approach would reconfigure the imbalance and redress the undesirable consequences of inequality.

Accordingly, this chapter builds on a correlative duty-based approach as a parameter to better approximating dignitarian thoughts in IP. A duty-based approach is not advocating a dichotomy regime separating rights from duties or replacing rights with duties, but a binary one taking full advantage of the extant IP flexibilities by embedding a sense of belonging, connectedness, honour and respect in a community of IP rights. Here I apply Peter Yu's description of the Yin-Yang school of philosophy as a dualistic and correlative mode of thinking in IP.⁴ The Yin-Yang school focuses on contexts, relationships and adaptiveness and its high tolerance for contradictions. It looks into relationships in communities and collective identities beyond individualism, in any given context. Focusing on correlation and individual's motives and behaviour in a social context, a duty-based approach will serve as a nuanced underpinning to the interface of IP power and competition where impacts will benefit society.

I. INTRODUCTION

The predominant individual rights discourse of IP is not fit for purpose when facing the global challenges of meeting the United Nations' Sustainable Development Goals (SDGs) and supporting the development of global public goods.⁵ There have been sporadic initiatives committed to the

and experimental space' [ES/P002943/1], and the UK MRC project 'CHNUK: Integrated platforms from science to policy in response to antibacterial resistance'.

¹ See: Peter Drahos and Ruth Mayne (eds.) *Global Intellectual Property Rights: Knowledge, Access and Development*, (Palgrave Macmillan 2002); Keith E. Maskus, *Private Rights and Public Problems: the Global Economics of Intellectual Property in the 21st Century* (Peterson Institute for International Economics 2012); Colleen Chien, 'Inequality, Innovation, and Patents' Santa Clara University School of Law Legal Studies Research Papers Series No. 2018-03, <<https://ssrn.com/abstract=3157983>>.

² Peter Drahos, *A Philosophy of Intellectual Property* (Ashgate 1996) 199-219. Proprietarianism assigns to property rights a fundamental and entrenched status. Proprietarianism sentiments are the justifications for expanding intellectual property rights. On the contrary, the instrumental attitude to IP rights refers to the idea that law is a tool and that the property instrumentalism must serve moral values. Similarly, Shubha Ghosh considered a stewardship model for property rights instead of the traditional ownership model. See: Shubha Ghosh, 'Managing the Intellectual Property Sprawl' (2012) 49 San Diego L. Rev. 979. Daniel Gervais offered the view that TRIPS norms should be embedded in a broader strategy in order to optimising innovation and users' access. See also: Daniel J. Gervais, 'The Changing Landscape of International Intellectual Property' in Christopher Heath and Anselm Kamperman Sanders (eds.) *Intellectual Property and Free Trade Agreements* (Hart 2007).

³ For the duties of IP privilege, see: Peter Drahos, *A Philosophy of Intellectual Property* (Ashgate 1996) 220-223. It is also noteworthy that Shubha Ghosh considered a duty approach to IP in the Hindu text The Bhagavad Gita. See also: Shubha Ghosh, 'Duty, Consequences, and Intellectual Property' (2013) 10 U. St. Thomas L. J. 801.

⁴ Peter K. Yu, 'Intellectual Property, Asian Philosophy and the Yin-Yang School' (2015) 7 WIPO Journal 1-15. See section IV. A below.

⁵ Margaret Chon, Pedro Roffe & Ahmed Abdel-Latif, 'Charting the Triple Interface of Public-Private Partnerships, Global Knowledge Governance, and Sustainable Development Goals' in *The Cambridge*

search for new parameters for embedding duties in IP. A number of international programmes have attempted to build a development friendly IP infrastructure. For example, the WIPO Development Agenda aims at achieving the global indicator of the Agenda for Sustainable Development by redefining Member States' IP rights and duties. WIPO's agenda on 'Ethics, Technology and the Future of Humanity' focuses on innovation for inclusive development.⁶ And the conservation of plant biodiversity also has the underpinning for the interests of all humanity.⁷

Notably at the domestic level, the USPTO has launched the annual competition on 'Patents for Humanity' program with a view to encouraging Innovation for humanity.⁸ Although the 'Patents for Humanity' programme offers a fast-track for humanitarian patents, it has been criticised as only providing minor incentives and offering little to redress the pressing issues caused by patent monopolies such as access to medicines.⁹ This programme is now presented as a competition for prizes. It will need reformulation for the real impacts to take place. A systematic rethink of IP duties would contribute to a balanced IP ecosystem.

In order to redress the imbalance within the IP regime, the solution explored in this chapter is to redefine the nature of ownership through the lens of collective duties with a view to optimising the use of IP rights. Reflecting on the duty-based trajectory established by legal theorists and other major philosophical regimes, this approach aims to strike an equitable dynamic between monopolies, on the one hand, and fair competition, on the other hand, by repositioning power, rights and duties within the IP policy framework. Moving towards the understanding of waves of IP duties,¹⁰ the equilibrium between innovation and conservation would be instrumental in promoting collaborative innovation and achieving SDGs. Here I use the 'waves of duties' terminology, as described in Jeremy Waldron's work, in order to indicate that there are different successive waves of IP duties arising from correlative rights. With enlightened IP duties, a balanced IP framework of rights and duties will be beneficial for attuning innovation to humanitarian needs.

Aiming at a sustainable, collaborative and equitable IP ecosystem, this chapter provides grounding for justifiable IP power that is balanced in rights and correlative duties. This, in turn, can contribute to determining an appropriate scope for monopolistic rights especially when multiple key stakes are involved, such as public interests, human rights, health, and foundational research. This chapter elaborates on the duty approach implicitly embedded in the patent system. It is anticipated that the principles developed here can also be applied to copyright, trademark, design rights, and other forms of IP.

This chapter considers, first, the evolving nature of IP monopolies. Following the establishment of international IP instruments and institutions over the past few decades, the IP ecosystem has been expanding and is now overwhelmed by overlapping thickets of rights. In parallel, the nature of IP has

Handbook of Public-Private Partnerships, Intellectual Property Governance, and Sustainable Development 3-26.

⁶ 'Ethics, Technology and the Future of Humanity' The WIPO Magazine, August 2018; <https://www.wipo.int/wipo_magazine/en/2018/04/article_0005.html>.

⁷ Aline Jaeckel 'Intellectual Property Rights and the Conservation of Plant Biodiversity as a Common Concern of Humankind' (2013) 2(1) Transnational Environmental Law 167-189.

⁸ <<https://www.uspto.gov/ip-policy/patent-policy/patents-humanity>>.

⁹ Matthew Rimmer, 'Patents for Humanity' (2012) 3(2) W.I.P.O.J. 196-221.

¹⁰ Jeremy Waldron, 'Rights in Conflict' (1989) 99(3) Ethics 503-519; Scott Veitch, 'The Sense of Obligation' (2017) 8(3) Jurisprudence 415-434, 423.

been reconceptualised from ‘privilege’ to ‘right’ and ‘asset’.¹¹ The assetisation of IP has resulted in undesirable problems that are unfit for innovation, sustainability and humanity. Although IP is highly technical, I submit that IP is instrumental in innovation policymaking by reflecting social values, moral and humanitarian considerations, as well as human rights in the judgement. It is a means but not an end for innovation.¹² I then propose a ‘duty’ approach and explain the nature and rationale for the corresponding need of duties in an ‘age of rights’.¹³ Based on the analysis on religious, non-religious, and legal philosophies, I note that a balanced definition of ownership is through the equal dynamics of controlled rights and duties in IP power. After giving consideration to how the duty approach has been implemented in a piecemeal manner, I then set out the primary waves of IP duties: duty to self-moderation; duty to benefit sharing, duty to open innovation, and duty to dissemination. I conclude by recommending future work for realising the full potential and benefits of the duty approach through a systematic redefinition of a wide variety of IP doctrines and legislation.

II. THE EXPANSIVE MONOPOLISTIC POWER

From the beginning of the development of the international IP regime until towards the end of the 20th century, the concept of intellectual property was about neither ‘property’ nor ‘rights’. It focused on providing inventors or creators with an ‘exceptional privilege’ to exclude others.¹⁴ The ever-expanding territory of IP has evolved from the exceptional ‘privilege’ to exclude to ‘right’ to exclude. Internationally, the Berne and Paris Conventions as well as the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) enshrined minimum standards for IP protection, yet they all retain significant flexibilities for domestic implementation. These instruments have greatly increased the monopolistic market power by transforming the nature of IP from exceptional privilege to commodification (where the ‘rights’ narrative was developed) and to assetisation (where IP has been reconceptualised as an investment asset).¹⁵

Whilst the shift from the General Agreement on Tariffs and Trade (GATT) to TRIPS moved from framing IP as a merely acceptable barrier to trade into an investment asset, the rise of international investment agreements (IIAs) recalibrates the nature of IP as ‘asset’ in a host country as investors

¹¹ Rochelle Dreyfuss & Susy Frankel, ‘From Incentive to Commodity to Asset: How International Law is Reconceptualizing Intellectual Property’ (2015) 36 (4) Michigan Journal of International Law 557. (Dreyfuss & Frankel).

¹² See Drahos ‘Intellectual Property: For Instrumentalism, Against Proprietarianism’ in (n2).

¹³ See e.g. two books of the same title, *The Age of Rights*, both published in 1990, respectively by Norberto Bobbio (English Translation, Polity 1996) and Louis Henkin (Columbia UP 1990). See also: Samuel Moyn, *The Last Utopia: Human Rights in History* (Harvard UP 2012). The ‘rights’ discourse predominately forms the narratives and justifications in public funded healthcare. See: Kenneth Veith ‘Obligation and the Changing Nature of Public Funded Healthcare’ (2018) 27(2) Medical Law Review 267–294. See section III below.

¹⁴ The justifications for IP have thus expanded from *ex ante* justifications to *ex post* justifications. Classic *ex ante* justifications focusses on influencing behaviours that before the right comes into being, and only grant ‘necessary’ IP monopoly as a necessary evil. Yet *ex post* justifications are based on investment and management claims, which would need closer scrutiny. See: Mark A. Lemley, ‘Ex Ante Versus Ex Post Justifications for Intellectual Property’ (2004) 71 University Chicago Law Review 129; UC Berkeley Public Law Research Paper No. 144.

¹⁵ Adam Mossoff, ‘Rethinking the Development of Patents: an Intellectual History, 1550-1800’ (2001) 52 HASTINGS L. J. 1255; Fritz Machlup & Edith Penrose, ‘The Patent Controversy in the Nineteenth Century’ (1950) X Journal of Economic History 1-29, 3. See: Rochelle Dreyfuss & Susy Frankel, (n11).

are entitled to claim 'expropriation' of their 'property'.¹⁶ Recent cases in international investment demonstrate the threat to a state's regulatory sovereignty in adopting public health measures.¹⁷ Although IP is recognised as an important policy lever in global health governance, a market-driven model amplifies the monetary values but marginalises the fundamental values in a democratic society.¹⁸ A holistic approach is required to address the pressing issues of global health governance in order to achieve pressing global health goals in the international trade and IP regime.

A. The Problems with a Rights Approach: Competition and Anti-competitive Practices

The patent system fosters a secretive competitive culture to register cutting-edge inventions; however, competition to register patent monopolies has proved to be inefficient as seen in many emerging fields of technologies. The inefficiency of patents are evident in the mobile phone patents wars and the recent gene editing CRISPR-Cas9 patenting and licensing controversies.¹⁹

By contrast, 'open science' demonstrates that, in a number of fields at least, innovation tends to be more effective while collaborative initiatives are in place.²⁰ While there have been initiatives proposed to share information, knowledge and industrial knowhow for open innovation,²¹ it is also true that after securing their patent rights, a number of companies strive for the extension of their

¹⁶ Rochelle Dreyfuss & Susy Frankel (n11).

¹⁷ For example: *Philip Morris Asia Limited v. The Commonwealth of Australia*, UNCITRAL, PCA Case No. 2012-12; *Eli Lilly and Company v. The Government of Canada*, UNCITRAL, ICSID Case No. UNCT/14/2; Henning Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (OUP 2016); David P. Fidler, 'The Challenges of Global Health Governance', International Institutions and Global Governance Program Working Paper, Council on Foreign Relations <<https://www.cfr.org/report/challenges-global-health-governance>>.

¹⁸ Dutfield and Suthersanen cautioned against monetisation of biodiversity governance. Graham Dutfield and Uma Suthersanen, 'Traditional knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights' (2019) 58(2) Washburn Law Journal 399. For marginalisation of social values in patents, see: Sigrid Sterckx & Julian Cockbain, *Exclusions from Patentability: How Far Has the European Patent Office Eroded Boundaries?* (Cambridge University Press 2015); Aisling McMahon, 'Gene Patents and the Marginalisation of Ethical Issues' (2019) 41 (10) European Intellectual Property Review 608-620.

¹⁹ Paul Rubens, 'Phone Patents: an Absurd Battle', *BBC Future* (18 Nov 2014)

<<https://www.bbc.com/future/article/20121116-phone-patents-an-absurd-battle>>; Mazhar Adli, 'The CRISPR Tool Kit for Genome Editing and Beyond' (2018) Nat Commun. 9 (1):1911; Catherine Jewell and Vijay Shankar Balakrishnan, 'The Battle to Own the CRISPR-Cas9 Gene-editing Tool' *The WIPO Journal* (17 April 2017) <https://www.wipo.int/wipo_magazine/en/2017/02/article_0005.html>.

²⁰ For example, the WHO's Global Influenza Surveillance and Response System convenes a network of laboratories from 110 countries, funded by governments and foundations. Amy Kapczynski 'Order without Intellectual Property Law: Open Science in Influenza' (2017) 102 Cornell Law Review 1539. See also: Joseph E. Stiglitz, Arjun Jayadev, and Achal Prabhala, 'Patents vs. the Pandemic' *Project Syndicate* (23 April 2020), <<https://www.project-syndicate.org/commentary/covid19-drugs-and-vaccine-demand-patent-reform-by-joseph-e-stiglitz-et-al-2020-04?referral=d582d5>>; Mariana Mazzucato & Els Torreele 'How to Develop a COVID-19 Vaccine for All' *Project Syndicate* (27 April 2020).

²¹ See: The WHO's endorsement on a technology pooling initiative to ensure access to Covid-19 health products for all. WHO Seventy-Three World Health Assembly, A73/CONF./1 Rev.1 (18 May 2020). For the 'Open COVID Pledge' initiative, see: <<https://opencovidpledge.org/>>. See also: Matthew Rimmer, 'Elon Musk's Open Innovation: Tesla, Intellectual Property, and Climate Change' in Matthew Rimmer (ed.) *Intellectual Property and Clean Energy: The Paris Agreement and Climate Justice* (Springer 2018) 515-551; Esteban Burrone, 'Patent Pooling in Public Health' in Margaret Chon, Pedro Roffe & Ahmed Abdel-Latif (eds.) (n5), Ch. 5; Krista L. Cox 'The Medicines Patent Pool: Promoting Access and Innovation for Life-saving Medicines through Voluntary Licenses' (2012) 4(2) Hastings Science and Technology Law Journal 293.

monopolies by adopting ‘anti-competitive behaviour’ (also known as strategic patenting, ‘life-cycle management’ practices in the form of patent thickets), secondary patenting (also known as ‘ever-greening’) and defensive patenting.²² When those strategies are adopted on platform technologies through dense patent thickets or reversed payment agreements, significant adverse effects often entrench the barrier on users’ access, follow-on innovation and free movement of information.²³ This results in innovations not reaching populations that are meant to benefit in a timely manner, and sometimes not at all.

An equitable IP system is desirable for fostering collaborative innovation, especially in areas where research suggests that it is the most efficient way of producing global public goods.

i. **Failure in the incentive theory**

The incentive theory serves as a key justification for IP protection, however, in practice, not every industry benefits from it. Market-based innovation is tailored for a profitable market but not essential needs for the public. There are fields critical for human life and safety, yet their business models do not sustain further research and development (R&D).²⁴ Some pressing needs in our generation remains unsettled. The linkage between markets and innovation unfortunately leads to various bottleneck in R&D for humanitarian needs. Proposals have thus been called to ‘delink’ the R&D function from the production, sales and distribution functions.²⁵ Evidence shows that the incentive theory is inept in dealing with one of the most pressing public health crisis, antimicrobial resistance, with significant efforts having been made to address this through establishing public funds for R&D.²⁶ The market-based incentive theory has failed to serve needs for humanity in the Covid-19 pandemic due to the fact that companies are investing in treatments that require repeated use but not products that can only be used once, like vaccines.²⁷ There are even arguments that

²² Duncan Matthews and Olga Gurgula, ‘Patent Strategies and Competition Law in the Pharmaceutical Sector: implications for access to medicines’ (2016) 38(11) *European Intellectual Property Review* 661-667; Arianna Jane Barnes ‘Abuse of Dominance Causing Congestion in the Pharmaceutical Industry: What Is the Cure in Light of the Reckitt Benckiser (Case CE/8931/08) Decision?’ (2018) 39(2) *European Competition Law Review* 49-63.

²³ Oliver Feeney et al., ‘Patenting Foundational Technologies: Lessons from CRISPR and Other Core Biotechnologies’ (2018) 18 *The American Journal of Bioethics* 36, 40.

²⁴ John Van Reenen, ‘Can Innovation Policy Restore Inclusive Prosperity in America?’ in Melissa S. Kearney and Amy Ganz (eds.) *Maintaining the Strength of American Capitalism* (The Aspen Institute 2019) 116.

²⁵ Frederick M. Abbott, ‘Public-Private Partnership as Models for New Drug Research and Development: The Future as Now’ in Margaret Chon, Pedro Roffe & Ahmed Abdel-Latif (n5); Kevin Outterson, John H. Powers, Gregory W. Daniel and Mark B. McClellan, ‘Repairing the Broken Market for Antibiotic Innovation’ (2015) 34(2) *Health Affairs* 277-285.

²⁶ Pedro Henrique D. Batista et al., ‘IP-based Incentives against Antimicrobial Crisis: a European Perspective’ *IIC* 2019 50(1) 30-76. For example, in the UK, there is a call to nationalising part of the pharmaceutical industry from Lord Jim O’Neill, who advised the UK Government on antibiotic resistance. See: James Gallagher, ‘Take over Pharma to Create New Medicines, Says Top Adviser’, *BBC News* (27 March 2019) <<https://www.bbc.co.uk/news/health-47719269>>.

²⁷ Ana Santos Rutschman, ‘The Mosaic of Coronavirus Vaccine Development: Systemic Failures in Vaccine Innovation’ *Journal of International Affairs* (21 March 2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3559460>; Joseph E. Stiglitz, Arjun Jayadev, and Achal Prabhala, (n20). See also: Frank Tietze, Pratheeba Vimalnath, Leonidas Aristodemou, Jenny Molloy, ‘Crisis-Critical Intellectual Property: Findings from the COVID-19 Pandemic’ April 2020, University of Cambridge Centre for Technology Management Working Paper Series <<http://doi.org/10.17863/CAM.51142>>.

curing patients in one shot is a bad business model.²⁸ Furthermore, the 'national sovereignty' claim on the ownership of viruses and pathogens is criticised for hindering international collaborative innovation for the timeous development of vaccines and therapeutics alike.²⁹

ii. Corrosion of IP flexibilities

IP flexibilities are exclusions and exceptions to IP protections that are key instruments for interpreting and approximating humanity. In the past few decades, various forums form new perspectives on IP as an investment which leads to erosion of IP flexibilities and loss of balance. Countries have been using regime shifts as a safety valve.³⁰ The marginalisation of morality and ordre public is one example of the narrowing scope of IP policymaking.³¹

In considering the responsibilities embodied in IP flexibilities, the corrosion of IP flexibilities needs re-examining the implications on humanity when certain parameters are left out in the historic trajectory.³²

B Towards a Collaborative Humanitarian Discourse

Equally worrying is the marginalisation of humanity and morality concerns at the advent of artificial intelligence (AI). Particularly in the AI age, human-centred innovation is attracting much focus and discussion. Human beings are the predominant agent, but not the subject or object of IP. Broader ethical issues need to be taken into account as to whether such innovation is beneficial or harmful for global public good.

Humanity is defined as 'Human beings *collectively*'; human kind; the quality of being humane; and benevolence.³³ In law it is most relevant to or closely parallel with the human right and human dignity discourse.³⁴ However, in this chapter a distinction is made between 'benevolence' (humanness) and 'human rights' while the former is achieved by adjusting the latter against correlative duties. I propose that a clear framework of IP duties would redress a predominately rights-based model, and will be the driving force for innovation for humanity.

The expansion of the IP ecosystem entrenches the existing global divide that leads to greater inequality and disparities.³⁵ IP is an expensive game; corporations instead of individual inventors or

²⁸ Antonio Regalado 'When Curing a Disease with Gene Therapy is Bad Business' *MIT Technology Review* (12 April 2018) < <https://www.technologyreview.com/2018/04/12/143913/the-gene-therapy-that-cures-bubble-boy-disease-isnt-worth-it-to-glaxo/>>.

²⁹ Michelle F. Rourke, 'Viruses for Sale: All Viruses Are Subject to Access and Benefit-sharing Obligations under the Convention on Biological Diversity' (2017) 39(2) E.I.P.R. 79-89.

³⁰ John Braithwaite & Peter Drahos, *Global Business Regulation* (Cambridge University Press 2000); Lawrence R. Helfer, 'Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking' (2004) 29 *Yale Journal of International Law* 1-83, 56.

³¹ See (n18).

³² These include the '(local) working' requirement as a ground for 'compulsory licensing'; the 'licences of right' for automatic licensing, and the 'manners of manufacture' in deliberating patentability of products of nature.

³³ Oxford Advanced Learner's Dictionary, 7th ed. (OUP 2005); Lexico online dictionary <<https://www.lexico.com/en/definition/humanity>>.

³⁴ See, for example on human rights and human dignity: Deryck Beyleveld and Roger Brownsword, 'Human Dignity, Human Rights, and Human Genetics' (1998) 61(5) *Modern Law Review* 661-680.

³⁵ One critique of the TRIPs Agreement is that it sets up a trade flow from the less developed to the more developed, thereby contributing a global structural inequality. See: Peter Drahos, 'Introduction' in Peter Drahos and Ruth Mayne (n1) 6; Colleen Chien (n1).

creators are most benefited from the accumulation of IP assets. IP should be instrumental in fostering ‘mass innovation’ as well as corporate elite innovation by tailoring a friendly system that avoids barriers to individual inventor.³⁶ A balanced approach to IP would be better likely to contribute to global development and to combat inequality.³⁷

Regrettably, the right to development has been under-utilised in the IP regime.³⁸ Globalisation and the making of a global market introduce opportunities as well as unprecedented challenges. In order to meet the global challenges of climate change and health security, as set out in the SDGs, a holistic and nuanced approach is required to reflecting stakeholders’ rights and duties.³⁹ The UN SDGs set out 17 sustainable development goals by 2030.⁴⁰ SDG 3 specifically refers to ending ‘epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases’.⁴¹ The flexibilities embedded in the TRIPS Agreement and the Doha Declaration on the TRIPS Agreement and Public Health 2001 (Doha Declaration) are key legal instruments for rebalancing IP rights and duties and achieving SDG3 on global public health initiatives.⁴²

Development is a collective responsibility that needs to be human-centred.⁴³ A holistic picture would reflect the nature of IP beyond a mere commercial tool and actively harness IP rights with an appropriate use of flexibilities. IP could thus become a practical tool embedding values towards a ‘human-centred, humanitarian’ approach based on essential values for fair (sharing), justice and sustainability. Discharging waves of IP duties will be instrumental in shaping a balanced IP regime.⁴⁴

C Internal and External Forces for IP Regulation

A balanced IP ecosystem is regulated by internal and external forces. Internal forces are intrinsic in-built limitations, while external forces depend on instruments from other legal regimes such as Corporate Social Responsibility (CSR) in company law, and considerations of *abuse of monopolies* and licensing in competition law policy. I will expand on this in the later part of the chapter.

As mentioned earlier, Peter Draho’s work on ‘duties of privileges’ considered the role duties played to limit the scope of IP privilege.⁴⁵ The following section will explain why the duty approach is desirable for redefining IP rights.

III DUTIES IN AN ‘AGE OF RIGHTS’

Failure to recognise the *collective identity* in the IP regime results in the deceptive interpretation of individual and piecemeal ownership that fosters the imbalance of rights and duties. Regulation and

³⁶ Phoebe Li ‘Patents, Mass innovation and the Xiaokang Society’ (2016) 8(1) WIPO Journal 97-108.

³⁷ Daniel Gervais ‘TRIPS and Development’ in Daniel Gervais (ed) *Intellectual Property, Trade, and Development: Strategies to Optimize Economic Development in a TRIPS-Plus Era* (OUP 2007) 3-59.

³⁸ Peter K. Yu, ‘Five Decades of Intellectual Property and Global Development’ (2016) 8 WIPO Journal, 1-10; Texas A&M University School of Law Legal Studies Research Paper No. 17-10.

³⁹ See (n5).

⁴⁰ Yu (n38).

⁴¹ Target 3.3.

⁴² WIPO Doc. CDIP/16/8. WIPO’s work with the WTO and as part of the WIPO-WTO-WHO trilateral supports efforts related to this target.

⁴³ Yu (n38).

⁴⁴ See discussions in section V below.

⁴⁵ See (n3).

governance theories have been rooted in European philosophies of individualism, egalitarianism and liberalism, following the three major regulatory paradigms: utilitarian, duty-based dignitarian, and rights-based individual approaches.⁴⁶ The utilitarian approach is derived from Bentham's calculation of cost and benefits. Although having been criticised as oblivious to social values, it somehow delivers convenient solutions to moral dilemmas arising from new technologies.⁴⁷ The dignitarian approach aims at preserving the integrity of life from the very beginning to the very end, yet controversies arise as to the ambiguities in defining human dignity and the boundaries of life. The distinct dignitarian approach dictates some of the elements of morality and ordre public though it is not always easy to reconcile these with the dignitarian approach due to a lack of consensus in social values.⁴⁸ A humanistic capabilities approach, also known as a human development approach, has thus been proposed as a duty-based approach, to redress the pitfalls in libertarian and utilitarian thoughts. The capabilities approach maintains that human flourishing depends not on a nation's GDP but by providing essential human welfare in cultivating human capabilities.⁴⁹

In the 'age of rights',⁵⁰ a rights-based model has become the mainstream common belief in a pluralistic democratic society. It bestows upon individual agents various rights and entitlements including property rights. 'A community of rights'⁵¹ has then been used as a governance model by which competing stakeholders' interests are to be evaluated in a democratic pluralist society. However, in a rights-based society, public interests or the greater good of humanity, inherently present an obscure role under the competition of rights.⁵² It is thus less clear how to delineate and embody collective community's rights as opposed to multiple individual rights.

As I will explain in the following section, in a neoliberal capitalist society, the notions of 'rights' often eclipse other corresponding values, such as duties and collective identities for humanity. While the justifications for rights and duties have been built upon the tripod of dignitarian, utilitarian, and rights-based models,⁵³ the 'rights' narratives often overshadow other underlying values. Far too often unfettered rights have been justified with the undesirable effects of damaging global public

⁴⁶ Roger Brownsword, *Rights, Regulation, and the Technological Revolution* (OUP 2008) 35-41; Deryck Beyleveld and Roger Brownsword, *Human Dignity in Bioethics and Biolaw* (OUP 2001); Deyck Beyleveld and Roger Brownsword, 'Human Dignity, Human Rights, and Human Genetics' in Roger Brownsword, W.R. Cornish, and Margaret Llewelyn (eds.) *Human Genetics and the Law: Regulating a Revolution* (Hart 1998).

⁴⁷ The famous *Oncomouse* cases notably followed the utilitarian formula, believing that legitimacy established as long as the scientific benefits to human beings outweigh the sufferings of the animals. *Harvard/Onco-Mouse* [1990] EPOR 501 (TBA); *HARVARD/Transgenic animal* (T315/03) [2005] E.P.O.R. 31.

⁴⁸ Brownsword (n46).

⁴⁹ The Capability approach stressing human development has its footing on dignitarian thoughts and is against utilitarian and libertarianism approaches for human flourish. See: Martha C Nussbaum, *Creating Capabilities: The Human Development Approach* (Harvard University Press 2011). The Human Flourishing project by Martha Nussbaum, <<https://gohighbrow.com/vulnerability-and-flourishing-martha-nussbaum/>>.

⁵⁰ See (n13).

⁵¹ See, for example: Deryck Beyleveld and Roger Brownsword, 'Principle, Procedualism and Precaution in a Community of Rights' (2006) 19(2) *Ration Juris* 141-168.

⁵² East Asian Confucian scholars have argued that individualism reinforces separation and isolation and that 'Rights pollution' has soiled the moral landscape and undermined human relationships. See: David Cummiskey, 'Confucian Ethics: Responsibilities, Rights and Relationship' (2006) *Eubios Journal of Asian and International Bioethics* 16 (January). For discussions on 'public interest' in patents, see: Shobita Parthasarathy, *Patent Politics: Life Forms, Markets, and the Public Interests in the United States and Europe* (University of Chicago Press 2017).

⁵³ Brownsword (n46).

goods. A dominant rights-based regime is partly due to the deceiving concept of absolute ownership and entitlement. Therefore, the duty approach proposed here is a practical means to better engage dignitarian approaches in the rights regime. With a deeper understanding of the nature of IP duties, the scope and abuse of IP power would be better understood.

A IP Power, Rights, and Duties

It is essential to traverse to the realm of legal theory to familiarise oneself with the nature of rights as well as duties. Legal theorists have long reflected on the downsides caused by a rights-based society. Jeremy Waldron, Scott Veitch, and Onora O’Neil further advocate that duties should foreground rights, and that the relationality and reflexivity of the two will optimise an equilibrium.⁵⁴ Following on from their proposition of duties being the foundation of rights, IP duties would need to be set out before IP rights come into play. In this chapter, however, I do not intend to debate the priority over rights or duties, but focus on the equal dynamics of the two as shown in the IP Yin-Yang model (see section IV. A below).

Looking back in history, the pioneering modern economist and moral philosopher, Adam Smith’s proposed ‘sense of duty’ refers to our sentiments towards others’ feelings: pity for others’ sorrow, resentment at injustice, the sympathy one feel with others’ pleasures or set-backs.⁵⁵ He also described the interests of ‘an order of men’ to deceive and oppress the public and that civil governments and institutions were the defence of the rich against the poor.⁵⁶ When sketching the ecology of obligations, Samuel Moyn urged a re-think of the self-image of our time as an ‘age of rights’ and to shift the focus to the activities of obligations which manifest ‘dignity of man’ and in a practical way.⁵⁷

B The Dominance of Rights and Benefits of Obligations

Rights have been the cornerstone for a neoliberal capitalist economy. ‘Legal obligations’ are very little discussed as opposed to ‘legal rights’.⁵⁸ Moving from the rights discourse, the paradigm shift to a balanced framework articulating obligations has the potential to treating inequalities and global catastrophes. The obligations discourse constrains the excessive powers, reducing inequality and restoring solidarity seen through the lens of obligation. It contributes to the understanding of ‘Juristic form of solidarity’ that consists in bonds of trust; respect for dignity; repository; not built on foundations of exploitation. In so doing, collective common good could be developed and collective

⁵⁴ See, for example: Peter Birks, *The Roman Law of Obligations* (OUP 2014); Reinhard Zimmerman, *The Law of Obligations* (OUP 1996); Daniel Matthews and Scott Veitch (eds.) *Law, Obligation, Community* (Routledge 2018); Jeremy Waldron, ‘Rights in Conflict’ (1989) 99 *Ethics* 503, 510; Jeremy Waldron, ‘Duty-bearers for Positive Rights’ <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2510506>; Onora O’Neil, ‘Women’s Rights: Whose Obligations?’ in *Bounds of Justice* (CUP 2000) ch 6; Agnes Heller, ‘Are There Obligations Without Rights?’ (2010) no 52 *Revista de Faculdade de Direito – UFPR, Curitiba* 11.

⁵⁵ Adam Smith, *Theory of Moral Sentiments*, 237. The subtitle for Smith’s first book was: ‘An Essay Towards an Analysis of the Principles by which Men Naturally Judge concerning the Conduct and Character first of their Neighbours and afterwards of Themselves’. Cited from Veitch, (n10).

⁵⁶ Adam Smith, *Wealth of Nations* (OUP 1976) I, xi, p 10; 715, cited from Veitch (n10).

⁵⁷ Veitch (n10).

⁵⁸ Samuel Moyn, ‘Reclaiming the Language of Duty in an Age of Human Rights’ *ABC Religion & Ethics* (14 Aug 2019) <<https://www.abc.net.au/religion/reclaiming-the-language-of-duty-in-an-age-of-human-rights-samue/11412158>>..

identities sustained. In summary, by drawing the limits and potential of collective action, obligations provide ties of solidarity for humanity to flourish.

Before setting out the key waves of IP duties in Section V, I will now turn to the rights and duties associated with ownership in different contexts.

IV OWNERSHIP IN CONTEXT: RIGHTS AND DUTIES

An absolute right of ownership is deceptive and illusory. In the spirit of solidarity, ownership rights will need to be subject to the operation and functions of other neighbouring or conflicting rights, and indeed, associated or corresponding duties in a broader social and economic context. We can gain an in-depth and holistic view on ownership by reviewing different philosophical and cultural contexts.

A. Religious Philosophies

Christian tradition recognises the legitimacy of private property ownership, but not as an absolute or untouchable principle. While the Christian social law recognised the legitimacy of property ownership, other key principles applied include: human dignity; community and the common good; human rights and responsibilities; option for the poor the vulnerable; global solidarity; stewardship of creation; and the universal destination of the earth's goods.⁵⁹ Due to the religious ground of morality, the existence of monopolies was contested as a sin and the early Church contended that monopolies needed to be limited.⁶⁰

Contrary to the *rights* approach, the Eastern Asian Confucian regime offers an interesting comparative study due to its unique distinction from the Western uptake of individualism and capitalism. It carries no account of rights, but instead focuses on social ordering of obligations, to maintain balance across societies and the state. As mentioned above, the Yin-Yang school is another dominant school of Chinese philosophies, which offers the alternative ways to address the ongoing IP challenges. The Yin-Yang doctrine teaches that all things are products of two opposite elements, forces, or principles: Yin, which is negative and passive, and Yang, which is positive and active.⁶¹ Based on Peter Yu's work on IP and the Chinese Yin-Yang school, here I use the Yin-Yang model to illustrate a harmonious IP ecosystem consisting of an equal dynamic of IP rights and IP duties (see Fig. IV. A).⁶² Peter Yu described the different relationships within the Yin-Yang cosmology: contradiction and opposition, interdependence, mutual inclusion, interaction (or resonance), complementarity (or mutual support), and change and transformation. The six disparate relationships reveal the possible evolution of the roles of stakeholders in a balanced IP ecosystem.

⁵⁹ Roman Chelij, 'IP in Christian Law' (2012) 3 IPQ. 137-148.

⁶⁰ Drahos (n2) 31.

⁶¹ Yu (n4).

⁶² Yu (n4).

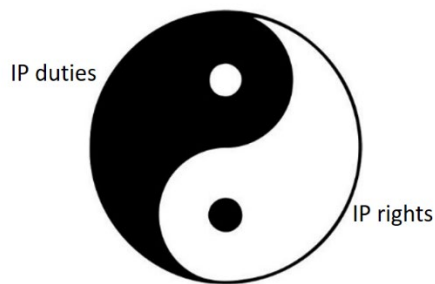


Fig. IV. A. A dual IP ecosystem

Buddhism originated in Northern India about six hundred years BC and was introduced to China and other Asian countries along the Silk Road. It focuses on human suffering, death and life after death. A Buddhist does not hold on to anything as the external worlds are considered illusory.⁶³ The Buddhist notion of ownership is similar to that of Job's revelation in the Bible in that one does not really control or beget total ownership and that ownership of property or relationship is a deceptive and transient concept. Relevant to this strand of thoughts, Shubha Ghosh considered the consequentialist justification for IP and proposed a duty-based justification for IP rights by examining the idea of justice in the Hindu text of The Gita.⁶⁴ Rejecting the utilitarian approach, he argued for a more nuanced way that considered the consequences and effects of IP rights on duties.

In Muslim literature, the importance of keeping common ownership on key properties is noted. For example, water, grass, fire and salt are things of common use, which must be kept under joint or common ownership of the community. This may be the early concept of global public goods. In the Muslim tradition, knowledge is a common human heritage which should not be monopolised by individuals or companies.⁶⁵ Further, Islam explicitly prohibits unfair competition and monopolistic practices. Intellectual property abuse is relevant to the prohibition of hoarding by which withholding a product from the market to increase the price rise resulting from this artificial dearth of supply. Muslim scholars have critiqued the global intellectual property regimes as dysfunctional and unable to meet the objectives of fostering creativity and promoting innovation as it favours technology exporting countries against importing ones, as well as favouring private interest against the interests of the public.⁶⁶

In summary, the consensus based on the world's major religious philosophies recognises Individual ownership as an exception or temporary entitlement which should not endanger the normal

⁶³ Guoqing Zhang & Ruut Veenhoven, 'Ancient Chinese Philosophical Advice: Can It Help Us Find Happiness Today?' (2008) 9 J Happiness Stud 425-443.

⁶⁴ Ghosh (n2).

⁶⁵ Mohammed El Said, 'The Compatibility of Modern Intellectual Property Protection Norms with Islamic Principles: Lessons from History' (2012) 4(1) W.I.P.O.J. 121-128.

⁶⁶ Ibid.

exploitation of the common resources of mankind. The arrangement of legal ownership only confers a temporary transitional *tool* for an entitlement. This entitlement as a tool enables one to further reach one's fulfilment more fully in order to serve the community and the greater common good.⁶⁷ I now turn to examine the notion of ownership in non-religious law and philosophy.

B. Ownership in Non-religious Philosophy: Social Function of IP

European philosophers consider the nature of property rights by examining their social function.⁶⁸ Contemporary definitions of ownership imply the existence of a legal relationship between the owner (subject) and the thing (object), and third parties. Therefore, ownership only indicates an indeterminate extent of entitlements in a legal context, but not the absolute sum total of the entitlements of the owner. It involves certain entitlements, and respect for others' entitlements. Ownership is not absolute but subject to limitations. With entitlements and self-restraint, multiple ownerships and co-ownership could further be developed.

Therefore, the notion of absolute ownership is deceptive. Ownership rights are subject to variants in a broader context and other limitations. It could often be tempered by correlative waves of duties. In the context of IP, ownership needs repositioning for a level playing field, aiming for sustainability and global development as guided by the SDGs. IP duties, serving as a correlative overarching cornerstone alongside IP rights, can prevent abuse and offset the downsides of a predominant rights-model. It can promote a balanced regime reflecting benevolence and sensitive love to others in order to serve humanity.

V WAVES OF IP DUTIES: BENEFITS OF A DUTY APPROACH

The *collective identity* in IP constitutes a justification for protecting the 'Good of Mankind', and for the proposition that IP monopolies should be subject to internal and external moderation. For example, justifications for intervention could be found in competition law (prevent abuse/ obligation to license), risk management (as seen in the WTO Agreement on the Application of Sanitary and Phytosanitary Measures, SPS Agreement), and company law (Corporate Social Responsibility, CSR). Essential waves of IP duties include a duty to moderation and a duty to benefit sharing by means of open innovation and dissemination.

A. A Duty to Self-Moderation

Following on from the Yin-Yang relationships, the duty to self-moderation demonstrates the basic relationships between IP rights and IP duties in contradiction, interdependence, and mutual inclusion.⁶⁹ A duty to self-moderation of IP rights would be instrumental for future development in

⁶⁷ Cholij (n59).

⁶⁸ For example, Thomas Aquinas considered private rights to be just to the extent that it serve the general interest. Private property had to be subject to limitations when it lost the service for the general interest. The German scholar, Joseph Kohler, wrote that 'property is not the bastion of egoism but rather the vehicle for social exchange'. They all advocated the social function of property and that 'this right must be exercised for the well-being of the community'. See: Christopher Geiger, 'The Social Function of Intellectual Property Rights, or How Ethics Can Influence the Shape and Use of IP Law' in Graeme Dinwoodie (ed.) *Methods and Perspectives in Intellectual Property* (Edward Elgar 2013).

⁶⁹ Yu (n4). See section IV. A.

stakeholder interaction, mutual support, and transformation.⁷⁰ Due to the temporal trigger point starting early from pre-grant phases, I consider a *duty to self-moderation* to be the first stepping stone for a balanced IP regime. Internal self-moderation of IP is essential before resorting to other external regulating forces post grant. In Draho's words, IP rights bear an intrinsic negative duty to be exercised in a responsible way, particularly when it comes to the rights of litigation and enforcement.⁷¹

IP plays a critical but limited role in innovation policy that requires other collaborative schemes to incentivise innovation.⁷² As mentioned above, certain industries do not directly benefit from IP but use other financing models to avoid market failures.

IP ownership is based on social contracts where the monopolies are justified by the disclosure of innovation with a view to promoting the dissemination of knowledge. The temporary restriction to public access serves as a means for the public interest of promoting innovation and dissemination in the long run, yet the paradoxical nature of patents depends on delicate reconfiguration of the scope of monopolies.

As IP does not operate in a vacuum but in a broad social and economic context, recently, a contextual approach to IP has emerged by engaging a multi-factorial approach in patent eligibility to restrain excessive rights.

i. **A multi-factorial approach**

The consequentialist approach to IP rights and duties advocated by Shubha Ghosh amplifies the importance of taking into consideration the consequences and effects of IP law and policymaking.⁷³ The appropriate scope of IP rights could not be decided separately from the consideration of the consequences and effects of rights on the duties. One way to IP self-moderation is to improve the quality of patent granting and to restrain unjustifiable patent power.⁷⁴ One example is from the Indian Patents Act that incorporates 'therapeutic efficacy' as an extra yardstick to evaluate the patentability for secondary patent granting.⁷⁵

⁷⁰ Ibid.

⁷¹ Drahos (n2), 221-222.

⁷² While Keith Maskus proposed a 'comprehensive approach' to IP, Joseph Stiglitz put forward a similar 'portfolio approach' that recognises the limited role of IP which requires other collaborative schemes for incentivising innovation. See: Phoebe Li (n3636); Joseph E. Stiglitz, 'Institutional Design for China's Innovation System: Implications for Intellectual Property Rights' in David Kennedy and Joseph E. Stiglitz (eds.) *Law and Economics with Chinese Characteristics: Institutions for Promoting Development in the Twenty-First Century* (Oxford University Press 2013); Keith E. Maskus, 'Intellectual Property Rights in the WTO Accession Package: Assessing China's reforms' in Deepak Bhattasali, Shantong Li, and Will Martin (eds) *China and the WTO: Assessing, Policy Reform, and Poverty Reduction Strategies* (co-publication of the World Bank and Oxford University Press 2004) 66.

⁷³ Ghosh (n2).

⁷⁴ Barnes (n22).

⁷⁵ Indian Patents (Amendment) Act 2005 s. 3(d). See: Daniel J. Gervais 'Patentability Criteria as TRIPS Flexibilities: the Examples of China and India' in Ruth L. Okediji & Margo A. Bagley (eds) *Patent Law in Global Perspective* (OUP 2014); Uday S. Racherla 'Historical Evolution of India's Patent Regime and Its Impact on Innovation in the Indian Pharmaceutical Industry' in Liu Kung Chung & Uday S. Racherla (eds) *Innovation, Economic Development, and Intellectual Property in India and China*. ARCIALA Series on Intellectual Assets and Law in Asia. (Springer Singapore 2019).

The Australian Court in *D'arcy v Myriad* adopted the contextual 'other factors' approach in determining the patentability of human DNA.⁷⁶ The Court recognised the instrumental role of IP in social context, and considered a list of multiple factors including the purpose of the Patents Act; potential negative or chilling effects on innovation; conflicts of public and private interests; the coherence of the law; International obligations; and whether Involving law-making (legislature) is appropriate.⁷⁷

Similarly, a multiple factor approach is also used for assessing inventiveness in the UK. The UK *Actavis v ICOS* case clarified the scope for patent protection on the dosage regime. The UK Supreme Court emphasised that the law of inventive step is there to strike a balance in the patent system.⁷⁸ The test of inventive step is multifactorial and the relevant factors that may be at issue are dependent on the facts (and patent).

ii. **Incorporating risk regulation for public health and the environment**

Considering the objectives and purposes of intellectual property protection stated in the TRIPS Agreement and the Doha Declaration, it can be argued that IP is essentially a technical tool for maximising public interests in social welfare, public health and the environment.⁷⁹ I propose a workable reading of the TRIPS Agreement following the rationale of risk regulation developed from the WTO SPS Agreement in which Member States are entitled to adopt health measures for achieving an appropriate level of protection (ALOP).⁸⁰ In so doing IP will be subject to harmonisation with other legitimate agenda but not operate in a vacuum.

Another example linking public health consideration with patent granting is the Brazilian patent law that incorporates the prior consent requirement 'anuência previa' (prior approval) from the National Health Vigilance Agency (Agência Nacional de Vigilância Sanitária, ANVISA).⁸¹ In doing so, IP law is acting in conjunction with other regulatory systems for achieving an appropriate level of health protection.

B. A Duty to Benefit Sharing

The duty to benefit share has been developed from major international legal instruments as a duty to share the benefits to local communities from scientific advancement. Access to science and its

⁷⁶ *D'arcy v Myriad Genetics Inc* [2015] HCA 35.

⁷⁷ Rochelle C Dreyfuss, Jane Nielsen, Diane Nicol, 'Patenting Nature - a Comparative Perspective', (2018) *Journal of Law and the Biosciences* 1-40. The factorial approach again applied in *Meat and Livestock Australia v Cargill (Cargill)* [2018] FCA 51: Method claims for identifying bovine traits from nucleic acid samples using SNPs for 'managing, selecting, breeding and cloning cattle'.

⁷⁸ [2019] USKC 15.

⁷⁹ Frederick M. Abbott and Jerome H. Reichman, 'The Doha Round's Public Health Legacy: Strategies for the Production and Diffusion of Patented Medicines under the Amended TRIPS Provisions' (2007) 10 *Journal of International Economic Law* 921-987; Frederick M. Abbott, 'Innovation and Technology Transfer to Address Climate Change: Lessons from the Global Debate on Intellectual Property and Public Health' ICTSD Programme on IPRs and Sustainable Development No. 24 (13 July 2009).

⁸⁰ Phoebe Li, 'Rights and Responsibilities in Patents: a Precautionary Patent Framework in WTO Law' (2013) 35 (9) *European Intellectual Property Review* 516-26.

⁸¹ See: INPI e Anvisa definem critérios para procedimento de anuência prévia, <<http://www.inpi.gov.br/noticias/inpi-e-anvisa-definem-criterios-para-procedimento-de-anuencia-previa>>.

benefits is a universal and fundamental human right enshrined in Article 17 of the 1948 Universal Declaration of Human Rights (UDHR) and Article 15 of the 1966 International Covenant on Economic, Social, and Cultural Rights (ICESCR).⁸² The benefit sharing duty is also enshrined in the Convention of Biodiversity (CBD) and the Nagoya Protocol on Biodiversity, recognising the need to compensate the local communities for the commercialisation of local biomaterials or local knowledge. Another example is the Coalition for Epidemic Preparedness Innovations (CEPI), which is a new public private partnership on research and redevelopment of vaccines that lists equitable access policy by including shared risks and shared benefit policy in IP management.⁸³

C. A Duty to Open Innovation

Corporate Social Responsibility (CSR) has been defined as ‘the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as that of the community and society at large’.⁸⁴ The rationale of CSR is that corporations owe a share of their profits to society as it is the source of those profits and the bearer of their impact. It can also be understood as ‘the responsibility of enterprises for their impacts on society’. CSR is also a process by which a company evolves its relationship with stakeholders for the common good by adopting appropriate business strategies.⁸⁵ It is reflected in the law, enlightened self-interest, benevolence, and a duty of redress for harm from which one benefits. The duty to reduce any harm from the current patent system lies with policymakers, lobbyists and the industry, who have to fine-tune the system to a degree of maximum benefit and minimum harm. Companies particularly need to discharge their corporate social responsibility to reduce the harm generated by the IP system from which they benefit.⁸⁶

CSR is a self-regulating business model that involves a pyramid of activities from economic, legal, ethical, and philanthropic responsibilities.⁸⁷ However, the implementation, monitoring and reviewing systems have been criticised as ineffective due to the lack of accountability and uncertain scope and depth of CSR activities.⁸⁸ There is no solid mechanism for holding companies accountable for their pledge to follow a set of core principles and actions that reflects integrity and responsibility.⁸⁹

⁸² Aurora Plomer, *Patents, Human Rights and Access to Science*, (Edward Elgar 2015) 33. See: ‘Who Own Science: The Manchester Manifesto’ <<http://www.isei.manchester.ac.uk/TheManchesterManifesto.pdf>>.

⁸³ CEPI: New vaccines for a safer world, CEPI Policy Documentation, <<https://cepi.net/wp-content/uploads/2019/01/Equitable-Access-Policy.pdf>>.

⁸⁴ Richa Gautam and Anju Singh, ‘Corporate Social Responsibility Practices in India: A Study of top 500 Companies’ (2000) 2(1) *Global Business and Management Research: An International Journal* 43.

⁸⁵ Avinash Kumar and Pratik Tayal, ‘Corporate Social Responsibility under Companies Act 2013 - a Critical Analysis’ (2015) 36(12) *Comp. Law.* 383-387.

⁸⁶ Doris Schroeder, ‘Pharmaceutical Sector Have a Coresponsibility for the Human Right to Health?’ (2011) 20 *Cambridge Quarterly of Healthcare Ethics* 298-306.

⁸⁷ Benedict Sheehy, ‘Defining CSR: Problems and Solutions’ (2015) 131(3) *Journal of Business Ethics* 625-648; Archie Carroll, ‘The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders’ (1991) 34(4) *Business Horizons* 39-48.

⁸⁸ Avinash Kumar and Pratik Tayal, (n85); Chrispas Nyombi and Tom Mortimer, ‘Is a Multilateral Treaty on Business and Human Rights Justified?’ (2017) 23(4) *International Trade Law & Regulation* 126-136.

⁸⁹ Stewart Lyman ‘If Pharma Helps Quench the Covid-19 Pandemic, What Will It Want in Return?’ *STAT News*, (21 April 2020) <<https://www.statnews.com/2020/04/21/vaccine-quenches-covid-19-what-will-pharma-want-in-return/>>.

I propose a 'Patent for Humanity' programme to be embedded in the CSR regime as a rubric under which business will need to allocate a portion of their initiatives towards innovation for humanity.⁹⁰ Mirroring the Mencius 'Well Field' System, which was developed as open source communal land organisation throughout China early in the Zhou dynasty,⁹¹ one ninth of the land was devoted to communal use where a well was centrally located. In a similar way, I suggest companies discharge their corporate social responsibilities by dedicating one ninth of their core activities to promoting open innovation (see Fig. V. C. The Well Field System). The central part of the individual company's R&D portfolio will then be attuned to government's mission-driven industry strategies aiming for redressing substantial market failures.

Private	Private	Private
Private	Shared/ Public	Private
Private	Private	Private

Fig. V. C. The Well Field System

D. A Duty to Dissemination

Competition law is a key external tool to limit the abuse of IPRs. In circumstances where IP owners unjustifiably exclude competitors from markets, competition law may intervene in order to limit the exercise of IPRs.⁹² Notably we can observe the focus on competition law in the ICT sector through the development of Standard Essential Patents (SEP) and FRAND (fair, reasonable and non-discriminatory) licensing.⁹³ In recent years in the UK, there is a growing trend of applying competition law doctrines in drugs and healthcare.⁹⁴

The EU Treaty on the Functioning of the European Union provides for measures to prevent anti-competitive practices⁹⁵ and abuse of a dominant market position.⁹⁶ Similar provisions are reflected

⁹⁰ Cf: The USPTO 'Patent for Humanity' programme (n8).

⁹¹ c. 1046-256 bc. 'The Well-Field System: How China Pioneered Open Source 30 Centuries Ago'. Chinese (Pinyin) jingtian or (Wade-Giles romanization) ching-t'ien. <<https://www.britannica.com/print/article/639289>>; <<https://opensource.com/business/11/12/well-field-system-open-source-30-centuries-ago>>.

⁹² Steve Anderman, 'The New EC Competition Law Framework for Technology Transfer and IP Licensing', in Josef Drexel (Ed) *Research Handbook on Intellectual Property and Competition Law*, (Edward Elgar 2008).

⁹³ Jorge L. Contreras, 'A Brief History of FRAND: Analyzing Current Debates in Standard Setting and Antitrust through a Historical Lens', (2015) 80 Antitrust Law Journal No.1.

⁹⁴ UK Competition and Markets Authority website: <<https://www.gov.uk/cma-cases>>.

⁹⁵ Article 101.

⁹⁶ Article 102. See: Barnes (n22).

in the US Sherman Act 1890⁹⁷ and the UK Competition Act.⁹⁸ In the context of patents and competition, the Court of Justice of the European Union (CJEU) recognised that ownership of a patent does not confer a dominant position,⁹⁹ and that the mere existence of patent does not constitute a prohibited restriction of competition, concerns arise when it is the abuse or improper exercise of patents.¹⁰⁰ Patent monopolies become a concern when involving anti-competitive unilateral strategies.¹⁰¹

i. **A duty to work and a duty to license: the rise of ethical licensing**

As mentioned above, there is a general duty in international law to dissemination for the benefit-sharing of science and technological advancement.¹⁰² A duty to work or a duty to license the technology has emerged as IP holders' social responsibilities. Currently a substantial proportion of patents lay unused.¹⁰³ OECD has issued licensing guidelines on genetic inventions. It recognises licensing practices should encourage rapid dissemination of information and suggested IP holders license their inventions as broadly as possible.¹⁰⁴ The Structural Genomics Consortium adopts this approach to identifying drug targets for protein structures in the public domain where scientists retain the right of attribution but not property rights.¹⁰⁵

The duty of work has been the focus of discussion on the conditions to grant a compulsory licence.¹⁰⁶ A duty to work a patent in a realm was an important means for technology transfer and prohibiting abuse.¹⁰⁷ The 'local working' requirement, which may lead to a 'failure to work' or 'insufficient working', was first stipulated in the compulsory licensing provision in the Paris Convention for the Protection of Industrial Property (Paris Convention), but the requirement was morphed into the TRIPS Agreement as a non-discriminatory clause prohibiting different treatments on imported and

⁹⁷ Sections 1 & 2.

⁹⁸ The UK Competition Act 1998, Chapters 1 & 2.

⁹⁹ CJEU, Joint Cases C-241/91 P and C-242/91 P, RTE and ITP v. *Commission* ('*Magill*') (6 April 1995)

EU:C:1995:98, para. 46.

¹⁰⁰ *Parke, David & Co v Probel* (24/67) EU:C:1968:11.

¹⁰¹ The Court of Justice of the European Union (CJEU) has made it clear that the mere existence of a patent does not constitute a prohibited restriction of competition: there must be an element of 'abuse' or improper exercise of the right. See: *Parke, David & Co v Probel* (24/67) EU:C:1968:11.

¹⁰² See section V. B.

¹⁰³ Leisinger and Chatfield propose the opening of access to unused product patents for the development of medicines for use in low-income settings. See: Klaus M. Leisinger and Kate Chatfield, 'Working Together to Make the World a Healthier Place: Desiderata for the Pharmaceutical Industry' (2019) 28(1) *Camb. Q. Healthc. Ethics* 153.

¹⁰⁴ OECD, 'Recommendation of the Council on the Licensing of Genetic Inventions', OECD/LEGAL/0342 (2007). Available at: <<https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0342>>.

¹⁰⁵ A public-private partnership that supports the discovery of new medicines through open access research. <<https://www.thesgc.org/>>.

¹⁰⁶ The local working requirement remains controversial. Keith Maskus held that WTO Members have adopted production-based working requirements despite the language in Article 27.1 TRIPS. See: Keith E. Maskus, (n1), 107-108. Note that Cottier and colleagues contended that following a two-step test, the interpretations of the local working requirements may be consistent between the two instruments: the first being a lack of competitiveness and the second a proof of abusive 'failure to work'. See: Thomas Cottier, Shaheez Lalani, and Michelangelo Temmerman, 'Use It or Lose It: Assessing the Compatibility of the Paris Convention and TRIPS Agreement with Respect to Local Working Requirements' (2014) 17 (2) *J Int Economic Law* 437.

¹⁰⁷ Drahos (n2), 222-223.

locally produced products.¹⁰⁸ By categorising import as part of local working, such a transposition greatly narrows the scope of IP flexibilities for countries relying on technology transfer.

Compulsory licensing is a devised tool for addressing IP abuse, albeit rather dormant in practice.¹⁰⁹ Following on from the contextual interpretation of the purposes of the TRIPS Agreement and the Doha Declaration,¹¹⁰ compulsory licensing is a conditional right, not an exception. Member States have the autonomous right of granting a compulsory licence, depending on their level of development.¹¹¹ Member States should be entitled to determine the local working condition in accordance with their level of development.¹¹²

Patent rights are intrinsically a form of market power that could dictate how and to what extent the technology is used. One can envisage that with monopolistic power comes corresponding duties that can safeguard the socially responsible and ethical use of the invention.¹¹³ A sustainable IP regime would mostly rely on intrinsic self-regulation instead of resorting to external intervention through competition and compulsory licensing.¹¹⁴ Licensing agreements are key instruments for dissemination of innovation and technology transfer.

One way to prevent an abuse of patent power is to license it nonexclusively, by which scholars refer to 'ethical licensing'.¹¹⁵ Non-exclusive licensing instead of exclusive licensing would disseminate the innovation more broadly. Voluntary licensing schemes that focus on collaboration and cooperation in the industry will be in a better position to disseminate innovation in a more systematic and efficient way.

The 1997 UNESCO Declaration envisages the property in the human genome was communitarian, and the 1996 Bermuda statement declared that all human genome sequence information from a public funded project should be available in the public domain. However, biomedical innovation in recent decades has still been primarily led by privatisation and market monopolies.¹¹⁶ In the recent gene editing patent licensing practice, we can see patentees favour exclusive 'surrogate licensing' in therapeutic applications, outsourcing the licensing and commercialisation of a valuable patent portfolio to a private company.¹¹⁷ Although surrogate licensing is favoured by inventors, the

¹⁰⁸ See (n106). Article 27.1 TRIPS.

¹⁰⁹ Li (n80).

¹¹⁰ Article 8(1); Article 8(2) TRIPS Agreement.

¹¹¹ Phoebe Li, *Health Technologies and International Intellectual Property: A Precautionary Approach*, (Routledge 2014).

¹¹² See also: OECD 'Licensing of IP Rights and Competition Law: Background Note by the Secretariat', DAF/COM(2019)3.

¹¹³ See Drahos (n3).

¹¹⁴ Rupperecht Podszun, 'Standard Essential Patents and Antitrust Law in the Age of Standardisation and the Internet of Things: Shifting Paradigms', (2019) 50(6) IIC 720-745.

¹¹⁵ Christi J Guerrini, Margaret A Curnutte, Jacob S Sherkow & Christopher T Scott, 'The Rise of the Ethical License' (2017) 35 Nature Biotechnology 22; Shobita Parthasarathy, 'Use the Patent System to Regulate Gene Editing' (2018) 562 Nature 486.

¹¹⁶ Jorge L. Contreras 'Bermuda's Legacy: Policy, Patents, and the Design of the Genome Commons' (2011) 12(1) Minn. J. SCI. & TECH. 61.

¹¹⁷ The surrogate company then takes over the responsibility for licensing contracts, as seen in the CRISPR/Cas9 patents scenario in which University of California transferred their exclusive licensing rights to a Doudna's inventions to Caribou Biosciences, and the Broad Institute to Editas Medicine as its surrogate for

consequence of restricting access to health should be carefully assessed as opposed to nonexclusive licensing.

ii. **A duty to licensing on Socially Valued Inventions (SVIs)**

In recent decades, particularly in the telecommunication sector, debates have been centred on the duty of standard essential patent (SEP)¹¹⁸ holders to license their patents on terms that are ‘fair, reasonable, and non-discriminatory’ (FRAND).¹¹⁹ FRAND licensing is a tool to redress the undesirable effects of patent thickets by facilitating collaborative innovation amongst multiple inventors. These would include platform technologies, upstream patents or research tools; social public implications on essential human rights.¹²⁰ FRAND is a licensing scheme for collaborative innovation to be used in emerging technologies instead of developed fields. For emerging technologies where business models are still evolving, Governments could consider distinguishing between certain technologies that are suitable for FRAND licensing.

IP that is highly relevant to public interests would merit wider dissemination, including public health, education, climate change, and development issues.¹²¹ These Socially Valued Inventions (SVIs) will benefit from wider dissemination and thus a collective voluntary licensing platform would be a priority.¹²² The procedure expectations on SEP and FRAND licensing developed in the ICT sector can be transposed into different sectors. Recent development in life sciences includes the emergence of standards and increasing influence of competition law considerations in patent enforcement.¹²³ For example, UK Courts have increasingly engaged the public interest consideration in granting preliminary injunctions in relation to products in the health and the life sciences sector.¹²⁴ The

licensing human therapeutics technologies. See: Jorge L. Contreras and Jacob S. Sherkow, ‘CRISPR, Surrogate Licensing and Scientific Discovery’, (2017) 355 SCIENCE 698, 699; Jacob S. Sherkow, ‘Patent Protection for CRISPR: An ELSI review’ (2017) 4(3) Journal of Law and Biosciences 565-576.

¹¹⁸ European Commission, Setting out the EU approach to Standard Essential Patents, 29.11.2017, COM (2017) 712 final. In 2017, the EC published the Communication on standard essential patents. In order to guide negotiation and avoid abuse, the Commission focused on valuation principles for essential technologies, different licensing terms depending on the use of the technology and the level in the value chain where technology is licensed. It emphasised that there is no one-size-fit-all solution to what FRAND is and solutions can differ from sector to sector, and that the parties to a SEP licensing agreement, negotiating in good faith, are in the best position to determine the FRAND terms most appropriate to their specific situation. Yet it clearly stated that rightholders cannot discriminate between implementers that are ‘similarly situations’ and expressed that SEP licences granted on a ‘worldwide basis’ may be more efficient. See:

<https://ec.europa.eu/growth/industry/intellectual-property/patents/standards_de>; Paul Lugard and Sohra Askaryar, ‘The European Commission’s Communication on Standard Essential Patents: Not a Dark Alley, But No Bright Lines Either’ (2018) American Bar Association Intellectual Property Committee ABA Section of Antitrust Law.

¹¹⁹ Contreras (n93).

¹²⁰ Oliver Feeney et al. (n23).

¹²¹ The list is non-exhaustive but indicative of IP protection on global public goods that is critical to meeting global challenges. See: Keith E. Maskus (n1) ch.5; Peter Drahos & Ruth Mayne (n1).

¹²² I reflected a differentiated approach to IP for Socially Valued Inventions (SVIs) in my previous work. See: (n36).

¹²³ Daniel Lim, ‘Four Patent Lessons the Tech Sector Can Teach Life Sciences Companies’ IAM (2 November 2018).

¹²⁴ Those include the suspension of a final injunction on therapeutic antibodies in *Regeneron v Kymab*; a transcatheter heart valve in *Edwards v Boston Scientific*; and an implanted device used to avoid open heart surgery in *Evalve & Abbott v Edwards Lifesciences. Regeneron Pharmaceuticals, Inc v Kymab Limited and Novo Nordisk A/S*, UK Court of Appeal, 23 May 2018, [2018] EWCA 1186 (Civ), paras. 55-62; *Edwards Lifesciences LLC*

Courts have identified the life-saving features of medical devices that have led to decisions that an injunction on the alleged infringements would bring negative impacts on patients' interests and public interests.

VI. FUTURE WORK: TOWARD COLLABORATIVE INNOVATION

This chapter has set out a balanced IP regime by recalibrating IP rights through the lens of IP duties. By contrasting the contemporary rights-based regime based on capitalism and individual liberalism, I have reviewed the extent to which 'a duty-based' approach has a role to inform policy-making in the context of IP and competition. I have proposed the essential waves of IP duties that a sustainable IP regime could draw upon for a balanced dual Yin-Yang model. A duty-based discourse would serve to constrain excessive powers, reducing inequality and restoring solidarity.

I submit that under the extant framework, the appropriate level of IP rights could be optimised through the correlative lens of duties. In addition to resorting to external mechanisms for regulating IP, internal functional safety valves within the IP flexibilities should be reconceptualised and re-invigorated with a view to optimising the power balance between rights and duties. Following on from the evolving relationships between rights and duties as described in the Yin-Yang cosmology, a balanced IP framework with a clear collective identity of humanity would foster inclusive, collaborative innovation, and participatory ownership that would be beneficial to innovators, the broader society, as well as those who fund the innovators.

The chapter has depicted some applications of IP duties in practice, particularly in IP flexibilities, yet a systematic paradigm shift to a balanced dual rights and duties model would further change a wide variety of specific IP doctrines and legislation. My future work will supply more examples of how a duty approach would realise its full potential dealing with the dilemmas in IP.

End of text

v. Boston Scientific Scimed Inc, High Court of Justice [2018] EWHC 1256 (Pat); *Evalve Inc v Edwards Lifesciences Ltd* [2019] EWHC 1158 (Pat).